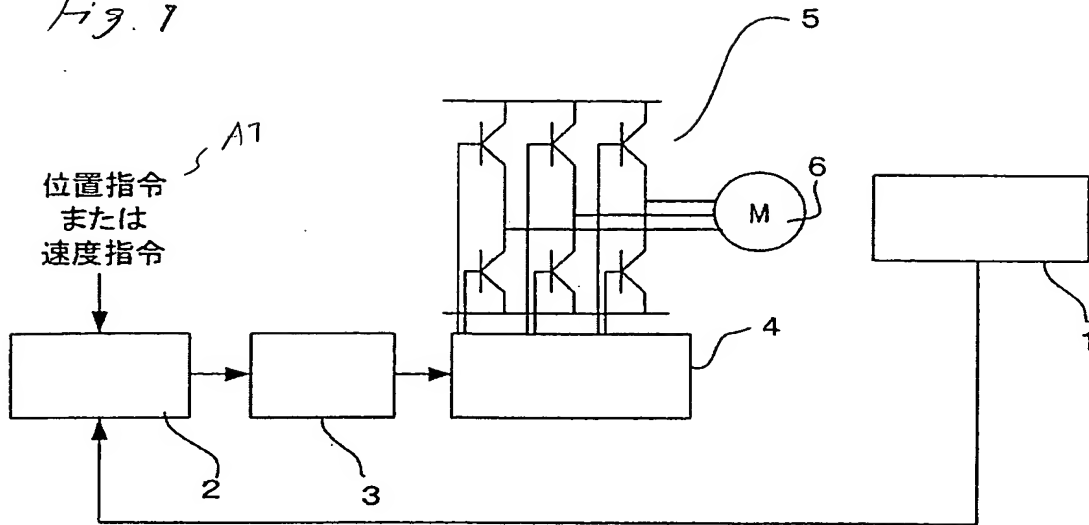


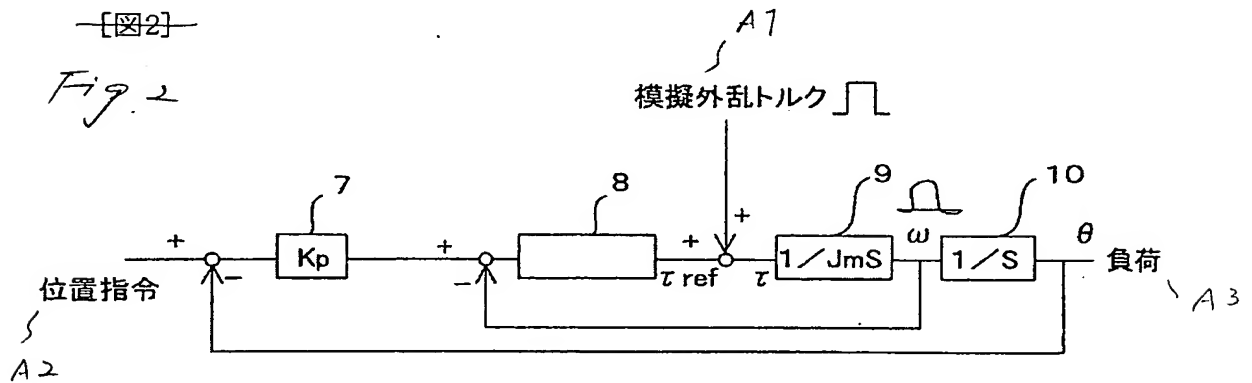
-[図1]-

Fig. 1



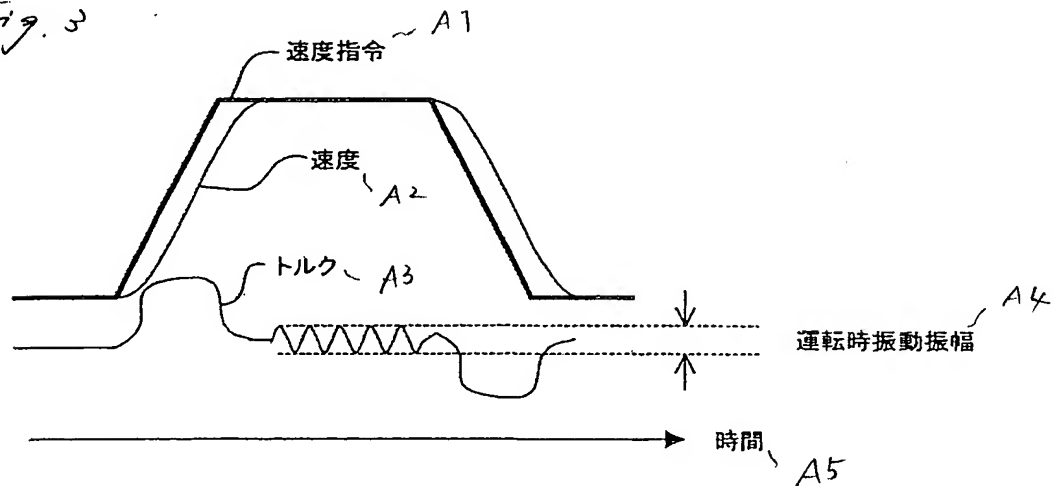
-[図2]-

Fig. 2



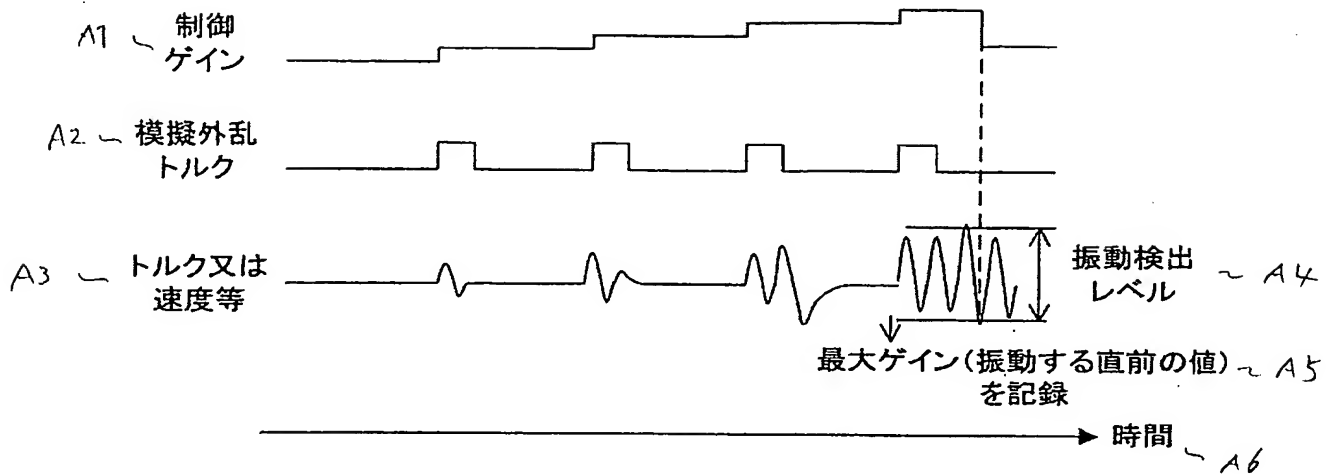
-[図3]-

Fig. 3



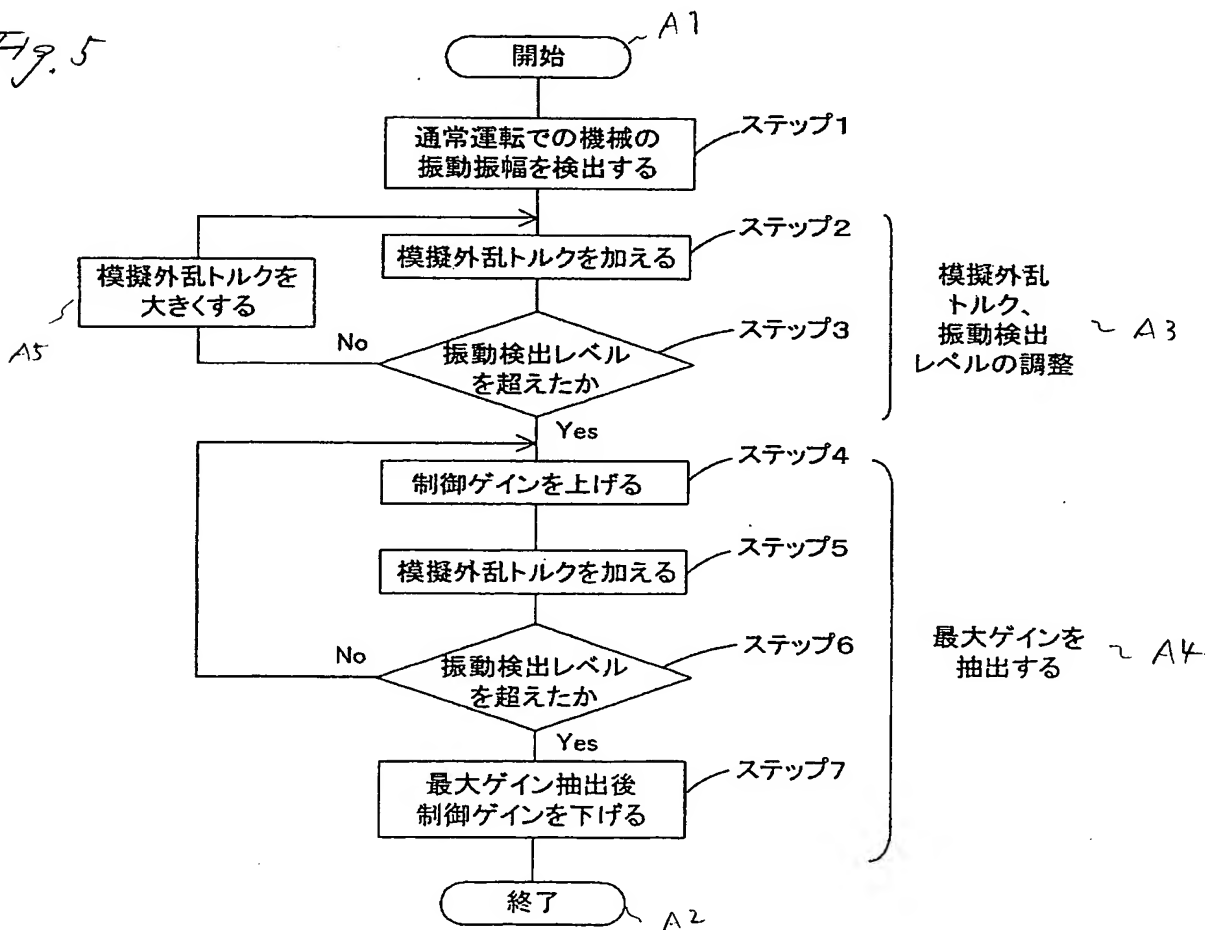
—[図4]—

Fig. 4



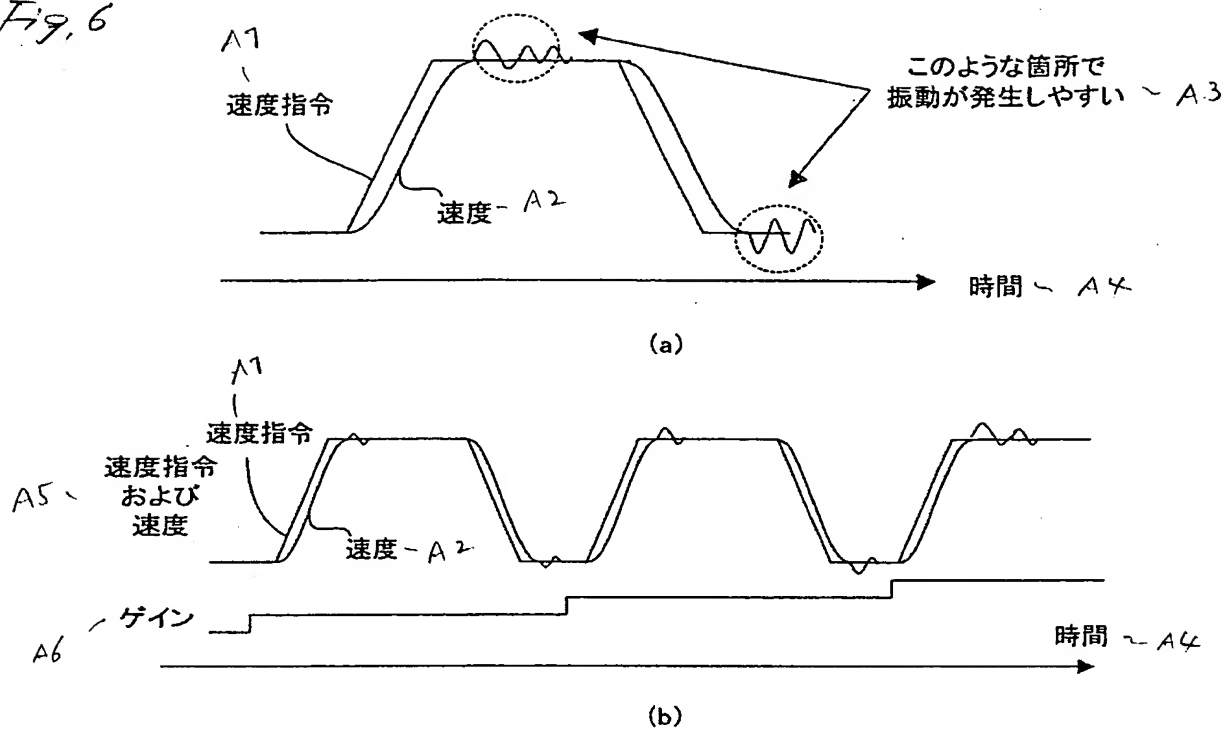
—[図5]—

Fig. 5



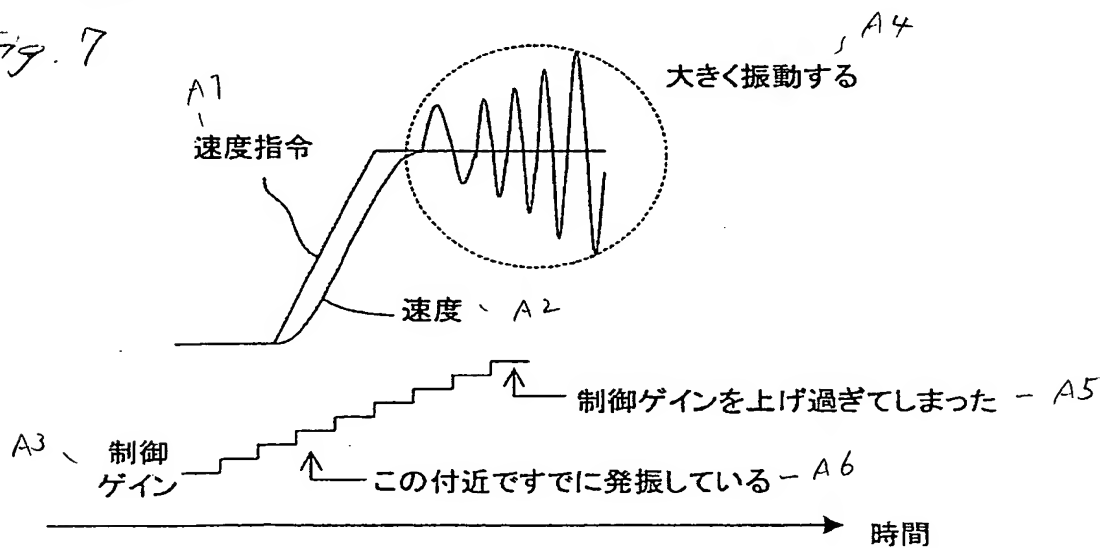
—[図6]—

Fig. 6



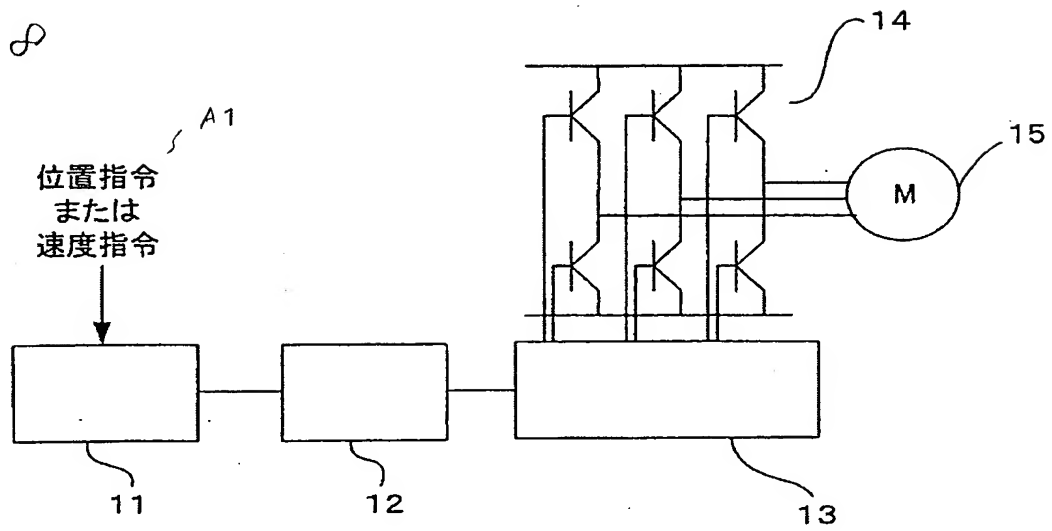
—[図7]—

Fig. 7



—[図8]—

Fig. 8



[Fig. 1]

A1: position command or speed command

[Fig. 2]

A1: simulated disturbance torque

A2: speed command

A3: load

[Fig. 3]

A1: speed command

A2: speed

A3: torque

A4: amplitude by vibration during operation

A5: time

[Fig.4]

A1: control gain

A2: simulated disturbance torque

A3: torque or speed

A4: vibration detecting level

A5: maximum gain (record a value just before vibration)

A6: time

[Fig. 5]

step 1: detect amplitude by vibration of machine during

ordinary operation.

step 2: apply simulated disturbance torque.

step 3: Is vibration detecting level exceeded?

step 4: raise control gain.

step 5: apply simulated disturbance torque.

step 6: Is vibration detecting level exceeded?

step 7: lower control gain after maximum gain is extracted.

A1: start

A2: end

A3: adjustment of simulated disturbance torque and
vibration detecting level

A4: extract maximum gain.

A5: increase simulated disturbance torque.

[Fig. 6]

A1: speed command

A2: speed

A3: vibration is liable to arise in such a position

A4: time

A5: speed command and speed

A6: gain

[Fig. 7]

A1: speed command

A2: speed

A3: control gain

A4: greatly vibrate

A5: control gain is excessively raised.

A6: already oscillated in this neighborhood

[Fig. 8]

A1: position command or speed command